CLAIMS

1. A speaker apparatus, comprising:

a primary coil disposed in the vicinity of a gap of a magnetic circuit and to which a current corresponding to an input audio signal is supplied;

a secondary coil, disposed in the gap, for inducing a current corresponding to a current that flows in said primary coil; and

a vibrating plate vibrated by said secondary coil with an interaction of the current induced by said secondary coil and a magnetic flux in the gap,

wherein the following formula is satisfied

$$N \times (R1 \times R2)^{1/2} / (2\pi \times L1 \times (1 - k2)^{1/2}) \geq 20000$$

where R1 is the DC resistance of said primary coil; L1 is the inductance of said primary coil; N is the number of turns of said primary coil; R2 is the DC resistance of said secondary coil; and k is the coupling coefficient of said primary coil and said secondary coil.

2. The speaker apparatus as set forth in claim 1,

wherein the individual constants R1, L1, N, R2, and k satisfy the following formula at a frequency f in a desired reproduction frequency band

$$2\pi \times f \times L12 \times (N2 \times R2 + R1) / (N2 \times X\ 1/2) \geq 0.3$$

$$X = (2\pi \times f)^2 \times (L1 \times R2 + L1 \times R1 / N2)^2 + \{-R1 \times R2 + (2\pi \times f)^2 \times L12 \times (1 - k2) / n2\}^2$$

3. A speaker apparatus, comprising:

a primary coil disposed in the vicinity of a gap of a magnetic circuit and to which a current corresponding to an input audio signal is supplied;

a secondary coil, disposed in the gap, for inducing a current corresponding to a current that flows in said primary coil; and

a vibrating plate vibrated by said secondary coil with an interaction of the current induced by said secondary coil and a magnetic flux in the gap,

wherein the following relation is satisfied

$$L1 / L2 = R1 / R2$$

where R1 is the DC resistance of said primary coil; L1 is the inductance of said primary coil; R2 is the DC resistance of said secondary coil; and L2 is the inductance of said secondary coil.

4. The speaker apparatus as set forth in claim 3,

wherein when the coupling coefficient of said primary coil and said secondary coil is equal to 1, the square of the number of turns of said primary coil is equal to the ratio of the DC resistance R1 of said primary coil and the DC resistance R2 of said secondary coil.